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Success Story

FLIGHT DEMONSTRATION SHOWCASES C2 INTEROPERABILITY AND REAL-TIME COLLABORATION

The Information Directorate, along with Boeing Phantom Works, recently concluded a successful flight demonstration of emerging information technologies that enable enhanced interoperability and real-time collaboration among command and control (C2) and strike platforms.

Accomplishment

This new technology, developed under the Weapon System Open Architecture (WSOA) program (managed by the directorate), demonstrated advances in both C2 and strike platforms' ability to operate within a network-centric environment. Directorate engineers conducted the flight demonstration using Boeing's F-15E1 Advanced Demonstrator and a 737 Avionics Flying Laboratory.

The directorate's new technology transferred pictures of targets and updated threat locations within a minute from the 737 to the F-15E. A joint tactical terminal on the 737 provided satellite communication input for part of the simulated time-critical target scenario.

The WSOA program provides an open system architecture 'bridge' across multiple legacy platforms to support timely, efficient transmission of situational awareness information. The WSOA architecture leverages commercial middleware technologies and adaptive resource management technologies, developed by the Defense Advanced Research Projects Agency's (DARPA) Quorum program and by the directorate to increase interoperability over emerging tactical data links such as Link-16.

During the flight, Boeing illustrated both imagery support and the ability for C2 and fighter aircraft to share data in real time, in order to retask en route strike forces in response to changes in mission priorities such as time-sensitive targets. Boeing also demonstrated full imagery downloads over Link-16 in less than a minute.

During the demonstration, Boeing passed target imagery, threat locations, and routing information to the F-15E. The F-15 weapon systems officer selected and downloaded target images and collaborated with the C2 operator by annotating over a common battlespace view to identify and attack the target.

Background

The Air Force originally awarded the WSOA contract in 1999 to Boeing Phantom Works and its partners—Washington University of St. Louis, Missouri, BBN Technologies, and Honeywell. The directorate's Embedded Information Systems Engineering Branch manages the contract, sponsored by the Computer Resources Support Improvement program, DARPA, Open Systems Joint Task Force, and the Joint Tactical Terminal Program Office.

Additional information

To receive more information about this or other activities in the Air Force Research Laboratory, contact TECH CONNECT, AFRL/XPTC, (800) 203-6451 and you will be directed to the appropriate laboratory expert. (03-IF-07)